

REMARKS/ARGUMENTS

Claims 1-10 were pending in the present application. By virtue of this response, Claims 1, 5, 6 and 10 have been amended, and new Claims 11-14 have been added. Accordingly, Claims 1-14 are currently under consideration. Amendment or cancellation of claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. No new matter has been added.

The Examiner's attention is directed to the Information Disclosure Statement filed with this application and listing six references. It appears the Examiner did not initial and return this to Applicant. For the Examiner's convenience, a new copy is enclosed. Copies of the references were submitted when the application was filed January 25, 2000. If the Examiner requires copies, please contact the undersigned. Since this Information Disclosure Statement was filed with the case and the failure to review and initial same appears to have been an oversight on the part of the Office, no petition is being proffered in this regard at this time.

First, the Examiner objected to Figures 1A, 1B, and 1C on the grounds that they should have been labeled as prior art. This objection is traversed. See the specification at page 3, lines 25 and following: "Fig. 1A shows the desirable connection where video player or cable-TV set top box 14 scrambles its output video and provides the descrambling key while compliant display (TV) device 18 descrambles the video for display." Fig. 1A was not labeled prior art since it is in conformance with the invention.

The same goes for Figs. 1B and 1C. Fig. 1B is intended to show what happens with a "problematic" recorder and hence illustrates (by omission) aspects in conformance with the present invention. Fig. 1C shows generally the intended result in accordance with the present disclosure, see the specification, page 5, lines 22 and following.

Hence it is respectfully submitted that it would be inappropriate to label any of Figs. 1A, 1B, or 1C as prior art.

The Examiner also objected to the Abstract. The Abstract has been expanded as shown above. Therefore it is requested that the objection to the Abstract be withdrawn.

Claims 6-9 were objected to due to the use, in Claim 6, of the word "summer." The Examiner indicates this appears to be a typographic error, however it is not. A summer is, as illustrated in Fig. 7E, element 78 which is an element is suitable for combining signals. It is believed that this is a term well known in the field. See, e.g. McAdam (cited by the Examiner) at col. 9, line 7 using the term "summer." Hence this objection is traversed and it is requested that it be withdrawn.

The Examiner rejected Claim 1 as anticipated by Songer. The Examiner referred to Songer, column 12, lines 33-53.

The Examiner also rejected Claims 1 and 2 as anticipated by Morio. The Examiner referred to Morio, column 13, lines 29-57.

Claim 3 was rejected under 35 U.S.C. §103 as unpatentable over Morio further in view of Court. Claim 4 was rejected under 35 U.S.C. §103 as unpatentable over Morio further in view of Montgomery. Claims 5, 6, 7, and 10 were rejected under 35 U.S.C. §103 as unpatentable over McAdam in view of Morio. Claim 8 stands rejected under 35 U.S.C. §103 further in view of Court, and Claim 9 is rejected further in view of Montgomery.

While each of independent Claims 1, 5, 6, and 10 have been amended here, this is merely to improve form, eliminate redundant terms, not intended to narrow the claim, and not for purposes of patentability. Instead it is respectfully submitted that the present claims both as previously pending and as amended herein to improve their form distinguish over the cited references, as explained hereinafter.

The technical problem to which the present invention is directed is set forth in the specification at page 2, beginning line 3:

There is disclosed here how to place data in that part of video signals which will generally survive transmission to a receiving device ... which will not be recorded by certain classes of current or standard video recording or storage devices. The data is used by non-recording devices, such as a compliant (compatible) TV set, for instance, for control or descrambling of the video signal.

Further at page 4, beginning line 15:

Hence this disclosure is directed to methods and apparatuses for concealing or hiding data (such as decryption or descrambling keys) in a video signal so that the hidden data is not recorded by such a problematic standard (non-compliant) video recorder. That is, only special (compliant) video receivers or recorders can extract and use the hidden data.

It is also pointed out in the specification that certain video recorders do record, for instance, the vertical and/or horizontal blanking intervals of a video signal. If the descrambling key is present in the blanking interval, then the descrambling key will be recorded along with the remainder of the video signal, allowing later descrambling of the recorded signal using the included descrambling key. If instead particular video recorders are provided which do not record, for instance, the horizontal or vertical blanking intervals, then "hidden" data such as a descrambling or decryption key may be placed in that part of the video signal and will not be recorded. In this case any recorded signal will not be subject to descrambling or decryption since the necessary key will have been deleted from the recording.

Hence part of the solution to the technical problem disclosed in the specification is to exploit the operation of certain video recorders or similar devices, or to provide video recorders or similar devices which have limited capabilities, so that they will not record certain portions of the video signal. This allows advantageous transmission of hidden data which will be received and used by a TV set top box or TV set but not by the particular video recorder due to its differences from the TV set or set top box.

This allows normal display of the video signal by a TV set but makes it so that if the video signal is recorded, the resulting recording is not useful since there will be no way to decrypt/descramble it due to the loss of the key in the prior recording step.

Hence in accordance with the invention there is both the conveyance of data (other than the normal television/video content and timing signals) in a video signal where that data is such that it is in a part of the video signal not recorded by particular video recorders. The particular video recorders are, for instance, certain standard video recorders or "compliant" video recorders. By compliant here is meant, e.g., a video recorder incapable by design of recording certain portions of the video signal, such as for instance blanking intervals or portions of the video signal below a selected voltage level.

It is respectfully submitted that none of the references, alone or in combination, disclose or even suggest these features.

The Examiner cited Songer against Claim 1 referring to column 12, lines 33-53. It is not understood how the Examiner found the elements of Claim 1 in Songer. Songer discloses (see Abstract):

1151.00

The encoding method allows normal playback of the video material on a conventionally television receiver or monitor, but prevents the video material from being effective re-recorded or duplicated on any of a number of commercially available recorders by eliminating or distorting the video image upon playback of the re-recording to thereby destroy its commercial value. No decoder or unscrambler is required at the television receiver or monitor for normal playback of the encoded video signals.

Further at Songer, column 1, beginning line 54:

Accordingly the present method and system is directed to an encoding method which effectively destroys the commercial quality of unauthorized re-recording or copies of the originally encoded video material. No decoder is needed at the television receiver or monitor, ... on the other hand, upon unauthorized re-recording video material, many conventional video tape recorders function in the matter such

that upon playback of the unauthorized copy on a receiver the video image is eliminated or substantially distorted. (Emphasis added.)

The method is shown in Songer Figs. 1b and 1c where in Fig. 1b most of the vertical sync pulses in the area "B" are blanked out and new ones are provided in Fig. 1c which are shifted up in terms of amplitude at area "B2" of the waveform.

As quoted above, Songer's intention is that a typical television set or monitor will have no problem with this modified video signal in terms of displaying it without distortion, since the timing ("sync") circuitry in a television set or monitor is relatively robust. However the typical video recorder has different timing circuitry more sensitive to shifted vertical sync pulses, so the Songer shifted vertical sync pulses result in a distorted video signal when the recording is replayed. Hence viewing is permitted (without a decoder or descrambler) but recording and subsequent replaying is inhibited, because the resulting recording is not useful since the picture is distorted or blacked out as Songer says at column 5, line 20:

Upon replay of the copy tape, or re-recording, on this type of machine, the video will not be displayed because of a muting circuit included therein which causes the screen to go blank or black and the control track is not present on the taping replayed.

Hence Songer falls in the category of what is called in the field "anti-copy" technology where use is made of the differences between standard television receiver/monitors and standard video recorders so that a recording is distorted or unviewable when replayed.

Morio belongs to the same anti-copy class of technology, see Morio's Abstract:

A method of an apparatus for modifying a video signal such that a video picture can be reproduced on a television receiver in response to the modified video signal, but if the modified signal is transmitted and then recorded in a video signal recorder, an accurate video picture cannot be reproduced if that recorded modified video signal subsequently is played back.

Morio uses a somewhat similar approach as in Songer, see Morio's Abstract:

The vertical blanking interval containing one set of equalizing pulses followed by a set of vertical synchronizing pulses followed by another set of equalizing pulses is modified by replacing a portion of the vertical synchronizing pulses in a portion of the set of equalizing pulses following the vertical synchronizing pulses with simulated equalizing pulses in at least some of the vertical blanking intervals.

Therefore similar to Songer, Morio modifies the vertical blanking intervals with the same objective as Songer, see Morio, column 3, beginning line 68:

In particular, this signal modifying apparatus serves to alter the signals constituting the vertical blanking interval in a manner which does not affect the reception of such modified video signals by a television receiver, but which prevents an accurate video picture from being reproduced in response to the playback of an unauthorized recording of such modified video signal. (Emphasis added.)

Hence in the relevant respects, Morio appears to be similar to Songer.

The Examiner also cites McAdam. McAdam is directed to a different approach, which is scrambling. McAdam discloses a particular type of scrambling system suitable for television in which, as is conventional in scrambling, the video signal is initially scrambled ("coded") and must be descrambled by a special receiver including a decoder. See McAdam, column 1, beginning line 20:

This invention relates to television transmission and reception systems and, more particularly, to television signal and coding and decoding systems providing secure transmission and reception of both video and audio components of a television signal.

Secure transmission of television signals has become a matter of increasing importance with the growing popularity of video teleconferencing, cable TV and satellite TV transmission, and with the advent of direct-broadcast-satellite (DBS) transmissions.

Hence McAdam discloses a particular television scrambling/descrambling system. However there is no description or suggestion in McAdam about recording, or prevention of recording, or discouraging recording.

Also it is not seen that McAdam discloses any means of hiding or otherwise manipulating the descrambling key, or any relation of that key to video recording.

Relevant disclosure of McAdam with regard to the key is at column 7, line 66:

The transform identifier, which is used to unscramble the video signal at a receiver, is encrypted in the encryptor 52 along with a pseudorandom number generator seed value, on line 54. The seed value on line 54 is used to synchronize pseudorandom number generator 40 with a similar pseudorandom number generator at the receiver. The encrypted transform identifier and seed value, on line 55, are inserted in the horizontal blanking interval of the line spin scrambled video signal at a summer 56.

(Note that this passage uses the term "summer" in the same way as used in the present application, see the above traversal of the objection to Claim 6.) Note also that the reference to lines 54 and 55 here refer to McAdam Fig. 1 and to particular electrical conductors shown in Fig. 1, not to particular video lines.

Hence it is seen why Claim 1 distinguishes over the references, even in combination. Claim 1 calls for "providing the data; ... modifying a predetermined part of the video signal by inserting therein the encoded data; ... wherein the predetermined part of the modified signal is not recorded by particular video recorders." Clearly nothing like this is even suggested in the Morio or Songer references. These references disclose methods intended to inhibit recording but do not use any particular "data" and do not use a video signal to carry data. Hence in these references there is no "data" inserted in the video signal. Instead the vertical blanking intervals are modified by manipulating the blanking interval pulses. Moreover there is no suggestion or disclosure in either Songer or Morio that any part of the video signal is not to be recorded. It is assumed that the entire video signal would be recorded, however due to the modifications in the vertical blanking interval, the resulting recording is not useful since replay thereof results in a distorted or black picture as discussed above. In fact if in these disclosures the video recorder were to ignore the vertical blanking intervals, the copy protection would be inoperative.

McAdam is directed to scrambling and does include data which is the above mentioned "identifier" (descrambling key). McAdam discloses that this identifier is put into a particular part of the video signal. However there is no suggestion that this is a part of the video signal which is not to be recorded by any particular type of video recorder. In fact, in order to make the McAdam scrambling system generally useful, it is essential that any video recorder did record the horizontal blanking interval including the descrambling key so that the authorized user, who of necessity has a special television set equipped with a descrambler, can not only view the video but also record it and view his recording later.

Hence McAdam is a species of the type of scrambling system disclosed in the present application at column 3 beginning line 3:

Certain video (e.g. television) systems, including scrambling systems, pass data either in the clear or encrypted, in the vertical blanking interval of the video signal. (This data is usually not a part of the image or necessary for the video image).

McAdam is a species of television scrambling without any regard for the recording aspect. Hence McAdam does not even appear to acknowledge the technical problem addressed by this invention, much less provide a solution.

Therefore it is respectfully submitted that Claim 1 distinguishes over the references by reciting in its final clause "wherein the predetermined part of the modified signal is not recorded by particular video recorders." As discussed above, no such feature is suggested in any of the references much less disclosed therein. Hence Claim 1 distinguishes over the references and is allowable, as are dependent Claims 2-4.

The Examiner found the elements of Claim 1 at Morio, column 13, lines 29-57. It is respectfully submitted that the Examiner has mis-identified Morio by reading Claim 1 on Morio column 13. For instance the Examiner stated that the act of "providing the data" is shown in Morio column 13, lines 35-40. However there is no "data" being conveyed in Morio. Instead these are vertical equalization/synchronization pulses which carry no information in the sense of being data but are used for timing purposes and are similar to those present in a conventional video signal. The

Examiner found the act of “encoding the data” at Morio, column 13, lines 40-45. Again there is no encoding in Morio. Instead Morio adds pulses used for control purposes, not as data.

Moreover the Examiner found the step of “the predetermined part of the video signal is not recorded by particular video recorders” at Morio, column 13, lines 29-35. Again this is a misreading of Morio. The disclosure instead in Morio is that the entire video signal is in fact recorded including the blanking intervals. However, the resulting recording is not accurate since the timing circuitry of the video recorder is effectively fooled by the modified vertical blanking interval pulses, resulting in the distorted or blacked TV picture when the recording is replayed. Hence the Examiner’s analysis of Morio is at odds with the actual Morio disclosure.

The Examiner also stated at page 4, paragraph 13 of the action that “Morio ‘575 relies on synchronization data not being recorded by standard video recorders.” This statement is disputed. If anything, the entire video signal including the synchronization signals would be recorded in distorted fashion.

The Examiner also read Claim 1 on Songer, column 12, lines 33-53. Again, it is not seen where the various acts identified by the Examiner in Claim 1 are found in Songer column 12. The Examiner’s conclusion is that “In other words Songer ‘865 teaches a way to hide synchronization information in such a way that the information is received properly by receiving device, (e.g., a television set) but such a recording that video recorders of the synchronization information is hampered, and thus prevents a video signal from accurately being reproduced.” This statement is not true, since there is no “hidden” synchronization information in Songer. Instead in Songer the synchronization is altered so that it is not properly responded to by a video recorder. Also the so-called synchronization information which Examiner finds in Songer is not the same as the “data” recited for instance in Claim 1, as explained above with reference to Morio.

The Examiner also cited Court in rejecting dependent Claims 3 and 8. Claim 3 distinguishes over the references for at least the same reason as does base Claim 1. Claim 8 is similarly dependent on base Claim 6. Moreover in the Office Action at page 5, paragraph 15, the Examiner states regarding Court “However, Court ‘519 teaches a television communication secrecy technique in

which the video carrier is suppressed for a “predetermined part” of the video in which data is to be hidden (column 26, lines 40-61). This implies modifying and specifically reducing the voltage level of the video signal.”

Court (cited against only dependent Claims 3 and 8) discloses another type of scrambling system. As is typical, the Court descrambling key is present in the transmitted video. However there is no disclosure in Court about the descrambling key being hidden or non-recordable. There is also no disclosure in Court of the key not being recorded in any way, and hence Court also does not meet the present claims. Also, it is not seen where this portion of Court cited by the Examiner discloses or suggests what is recited in Claims 3 and 8 - “below a selected voltage level.” Instead, this portion of Court deals with signal frequency.

Claim 5 is directed to a method with some commonality to that of Claim 1, and Claim 5 recites in its preamble “wherein the data in a predetermined part of the video signal is not recorded by particular video recorders.” Again, no such feature is suggested in any of the references and hence Claim 5 distinguishes thereover.

Claim 6 is directed to a decoder, and somewhat similar to Claims 1 and 5 recites, in its final clause, “wherein the predetermined part of the modified video signal is not recorded by particular video recorders.” Again no such feature is shown or suggested in any of the references and so Claim 5 distinguishes thereover.

Claims 7-9 dependent on Claim 6 are allowable for at least the same reason as the base claim.

Similarly, Claim 10 is directed to a decoder in which as recited in the claim preamble “the data is encoded into a predetermined portion of the video signal not recorded by particular video recorders.” Again no such feature is suggested or shown in any of the references and Claim 10 thereby distinguishes thereover.

Claims 11-14, newly added here, are more specific about the nature of the "data" and are dependent respectively upon Claims 1, 5, 6 and 10 and hence allowable for at least the same reasons as are the respective base claims.

Hence it is respectfully submitted that all pending Claims 1-14 are allowable and allowance thereof is requested.

CONCLUSION

In view of the above, each of the presently pending Claims 1-14 in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding objections and rejection of the claims and to pass this application to issue. If it is determined that a telephone interview would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 136922002300. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: November 5, 2003

Respectfully submitted,

By Norman Klivans
Norman R. Klivans
Registration No.: 33,003
MORRISON & FOERSTER LLP
755 Page Mill Road
Palo Alto, California 94304
(650) 813-5850